

WHAT IS CLAIMED IS:

1. A communications network system, comprising:
 - a communications line;
 - 5 a data transmission unit that transmits a data having a specific ID code at a predetermined communications period to the communications line;
 - 10 a data reception unit that receives the data transmitted from the data transmission unit on the communications line;
 - 15 a determining unit that determines whether a communications period of the transmitted data on the communications line having the ID code which is equal to the specific ID code which is set as a communications acceptance ID code is coincident with the predetermined communications period; and
 - 20 a communications acceptance unit that accepts a communication of the data from the data transmission unit to the data reception unit only if the data provides the ID code which is equal to the specific ID code and provides the communications period which is coincident with the predetermined communications period determined by the determining unit.
- 25 2. A communications network system as claimed in claim 1, further comprising a communications control unit that indicates the data transmission unit and the communications acceptance unit to change both of the ID code of the data when the data is to be transmitted from the data transmission unit and the communication acceptance ID code to a new ID code which is different from the specific ID code if the determining unit determines that the communications period of the transmitted data is incoincident with the

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predetermined communications period.

3. A communications network system as claimed in claim
1, wherein the data transmission unit transmits a plurality
5 of data on the communications line, each data providing
a mutually different ID code of first through an n-th number
ID code at N-th number mutually different predetermined
communications periods, and the determining unit determines
whether the communications period of the data which is
10 transmitted from the data transmission unit on the
communications line and which provides the ID code which
is equal to the corresponding one of communications
acceptance ID codes is coincident with one of the
predetermined communications periods which corresponds to
15 that of the corresponding one of the first through N-th
number ID codes.

4. A communications network system as claimed in claim
3, wherein the communications acceptance unit accepts the
20 communication of the data from the data transmission unit
to the data reception unit only if the transmitted data
provides the ID code which is equal to the data whose
communications period is determined to be coincident with
the corresponding one of the predetermined communications
25 periods by the determining unit.

5. A communications network system as claimed in claim
3, further comprising a communications control unit that
indicates the data transmission unit to change the ID code,
30 when the transmitted data having the ID code which is equal
to that of the data whose communications period is determined
to be incoincident with the corresponding one of the
predetermined communications periods by the determining

- unit, to a new ID code which is different from any one of the first through N-th number ID codes and indicates the communications acceptance unit to change the communications acceptance ID code which is equal to the
5 ID code of the data whose communication period is determined to be coincident with the corresponding one of the predetermined communications periods by the determining unit to the new ID code.
- 10 6. A communications network system as claimed in claim 5, wherein the data transmission unit changes the ID code of the data to be transmitted therefrom on the communication lines to the new ID code which is a spare ID code in response to an indication by the communications control unit to change
15 the ID code to the new ID code.
7. A communications network system as claimed in claim 5, wherein the ID code is provided in an arbitration field of a predetermined data format of the data on the
20 communications line after a SOF field.
8. A communications network system as claimed in claim 5, wherein the communications control unit transmits a signal indicating a change of the ID code of the data transmitted from the data transmission unit to the new ID code to the data reception unit.
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9. A communications network system as claimed in claim 8, wherein the determining unit, the communication
30 acceptance unit, and the communications control unit are constituted by a gateway intervened on the communications line connected between a control system local area network including the data reception unit and a information system

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local area network including the data transmission unit.

10. A communications network system as claimed in claim
9, wherein the gateway comprises a memory to store pairs
5 of the communications acceptance ID codes and their
corresponding predetermined communications periods in
pairs and wherein the gateway compares the ID code of the
data transmitted on the communications line and its
corresponding communications period with those stored in
10 pair into the memory to determine whether both of the ID
code and its corresponding communications period are
coincident with the stored specific ID code and its
corresponding stored predetermined communications period.
- 15 11. A communications network system as claimed in claim
10, wherein the data reception unit of the control system
local area network comprises a vehicular automatic
transmission control unit and a vehicular velocity control
unit and the information system local area network comprises
20 a car navigation unit; an audio unit; and a display unit.
12. A communications network system as claimed in claim
11, wherein the gateway transmits a signal to the display
unit, the signal indicating that the communications control
25 unit changes the communications acceptance ID code to the
new ID code due to a trouble in the information system
network.
- 30 13. A communications network system as claimed in claim
10, wherein the information system local area network is
divided into two local area networks and the same gateway
module is intervened on the communications line connected
between the two local area networks, the one local area

network comprising the car navigation unit and the other local area network comprising the audio unit and the display unit.

- 5 14. A communications network system as claimed in claim
5, wherein the determining unit, the communication acceptance unit, and the communications control unit are provided in a car navigation unit which constitutes the data transmission unit and belongs to an information system
10 local area network and wherein the data reception unit constitutes a control system network, the information system network and control system local area network being connected together via a gateway module.
- 15 15. A communications network system, comprising:
 communications line means;
 data transmission means for transmitting a data having a specific ID code at a predetermined communications period to the communications line means;
20 data reception means for receiving the data transmitted from the data transmission means on the communications line means;
 determining means for determining whether a communications period of the transmitted data on the
25 communications line means having the ID code which is equal to the specific ID code which is set as a communications acceptance ID code is coincident with the predetermined communications period; and
 communications acceptance means intervened on the
30 communications line between the data transmission unit and the data reception unit for accepting a communication of the data from the data transmission unit to the data reception unit only if the data provides the ID code which is equal

to the specific ID code and provides the communications period which is coincident with the predetermined communications period determined by the determining means.

- 5 16. A method applicable to a communications network system, the communications network system comprising:
 - a communications line;
 - a data transmission unit that transmits a data having a specific ID code at a predetermined communications period to the communications line; and
 - 10 a data reception unit that receives the data transmitted from the data transmission unit on the communications line, the method comprising:
 - determining whether a communications period of the transmitted data on the communications line having the ID code which is equal to the specific ID code which is set as a communications acceptance ID code is coincident with the predetermined communications period; and
 - 15 accepting a communication of the data from the data transmission unit to the data reception unit via the communications line only if the data provides the ID code which is equal to the specific ID code and provides the communications period which is coincident with the predetermined communications period determined at the determining step.
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